

What is claimed:

1. An apparatus for forming an artificial valve to treat gastroesophageal reflux disease comprising:
 - a first endoscope to be inserted from the mouth into a body cavity;
 - a holding device extending out of the distal end of the first endoscope and holding a point of a digestive wall where the artificial valve is formed;
 - a first needle disposed the oral side of the point, retractable along the first endoscope and including a sharp end for penetrating from the oral side of the point to the anal side of the point;
 - a suture passing through following the first needle; and
 - a suture retaining device having a grasping section for grasping the suture after it has passed through the digestive wall.
2. The apparatus according to claim 1, further comprising:
 - a knot pushing device for pushing a knot retained and formed outside of a body by the suture retaining device.
3. The apparatus according to claim 1, wherein the holding device includes two jaws.
4. The apparatus according to claim 1, wherein the first needle has a hollow space disposed therein.
5. The apparatus according to claim 1, wherein the first needle has a through hole the distal end.
6. The apparatus according to claim 1, further comprising:
 - a second needle positioned side by side and spaced apart by a certain distance from the first needle.
7. The apparatus according to claim 1, wherein the first needle and second needle are disposed in the outer periphery of the first endoscope.
8. The apparatus according to claim 1, wherein the suture retaining device includes a guide member extendable with the holding device.

9. The apparatus according to claim 1, wherein the suture retaining device includes two jaws, the two jaws having an opening position and a closing position.
10. The apparatus according to claim 1, further comprising a second endoscope, the needle extending out of the distal end of the second endoscope.
11. The apparatus according to claim 1, wherein the first needle is retractable from the first endoscope on the proximal section of the holding device.
12. The apparatus according to claim 1, wherein when the holding device holds the junction of the stomach and the esophagus, and the first needle is positioned slightly near the oral side of the junction.
13. The apparatus according to claim 1, wherein a hole is disposed in the first needle.
14. The apparatus according to claim 1, further including an optical system with a side viewing direction.
15. An apparatus for forming an artificial valve:
an endoscope;
a holding device extending out of the distal end of the endoscope;
a suture retaining device extending out of the distal end of the endoscope;
a needle extending out of the endoscope at a location proximal to the distal end of the endoscope;
a suture retaining device having a grasping section;
a first optical system disposed substantially near where the holding device extends from the endoscope;
a second optical system disposed substantially near the location proximal to the distal end of the endoscope.
16. A treatment method for forming an artificial valve to treat gastroesophageal reflux disease, comprising:
inserting an endoscope from the mouth substantially adjacent to a point of a digestive wall where the artificial valve is to be formed;
holding a point with a holding device extending out of the distal end of the endoscope;
pulling down the point held by holding device;

penetrating the digestive wall from the oral side of the point to the anal side of the point by a needle positioned along the endoscope;
passing a suture through following the needle;
shortening the digestive wall with the suture to form the artificial valve; and
fixing the end of the suture to maintain the artificial valve.

17. The treatment method according to claim 16, wherein said fixing step includes:

tying the suture to fix the end; and
cutting off excess suture.

18. The treatment method according to claim 16, wherein the artificial valve is formed at least on the side of the greater curvature of the stomach.

19. The treatment method according to claim 16, wherein the suture passes the proper muscularis or deeper area of the esophagus wall or the gastric wall.